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RAW SEQUENCE LISTING

DATE: 11/06/2002

PATENT APPLICATION: US/10/086,816A

TIME: 14:32:39

Input Set : A:\2401pcd.app

Output Set: N:\CRF4\11062002\J086816A.raw

3 <110> APPLICANT: CIHLAR, TOMAS
 5 <120> TITLE OF INVENTION: NOVEL GENE ENCODING ORGANIC ANION TRANSPORTER
 7 <130> FILE REFERENCE: 240.1PCD
 9 <140> CURRENT APPLICATION NUMBER: 10/086,816A
 C--> 10 <141> CURRENT FILING DATE: 2002-10-15
 12 <150> PRIOR APPLICATION NUMBER: 09/330,245
 13 <151> PRIOR FILING DATE: 1999-06-10
 15 <150> PRIOR APPLICATION NUMBER: 60/132,267
 16 <151> PRIOR FILING DATE: 1999-05-03
 18 <150> PRIOR APPLICATION NUMBER: 60/088,864
 19 <151> PRIOR FILING DATE: 1998-06-11
 21 <160> NUMBER OF SEQ ID NOS: 10
 23 <170> SOFTWARE: PatentIn Ver. 2.1
 25 <210> SEQ ID NO: 1
 26 <211> LENGTH: 2123
 27 <212> TYPE: DNA
 28 <213> ORGANISM: Homo sapiens
 30 <220> FEATURE:
 31 <221> NAME/KEY: CDS
 32 <222> LOCATION: (263)..(1912)
 34 <400> SEQUENCE: 1
 35 ttccctgccct gacccccaaa gtgaggagaa gctgcaaggg aaaagggagg gacagatcag 60
 37 ggagaccggg gaagaaggag gacgagccaa ggaggctgct gtccccccac agagcagctc 120
 39 ggactcagct cccgggaagc aaccagctg cggaggcaac ggcagtgtg ctctccagc 180
 41 gaaggacagc aggcaggcag acagacagag gtctgggac tggaaggcct cagccccag 240
 43 ccactgggct gggcctggcc ca atg gcc ttt aat gac ctc ctg cag cag gtg 292
 44 Met Ala Phe Asn Asp Leu Leu Gln Gln Val
 45 1 5 10
 47 ggg ggt gtc ggc cgc ttc cag cag atc cag gtc acc ctg gtg gtc ctc 340
 48 Gly Gly Val Gly Arg Phe Gln Gln Ile Gln Val Thr Leu Val Val Leu
 49 15 20 25
 51 ccc ctg ctc ctg atg gct tct cac aac acc ctg cag aac ttc act gct 388
 52 Pro Leu Leu Leu Met Ala Ser His Asn Thr Leu Gln Asn Phe Thr Ala
 53 30 35 40
 55 gcc atc cct acc cac cac tgc cgc ccg cct gcc gat gcc aac ctc agc 436
 56 Ala Ile Pro Thr His His Cys Arg Pro Pro Ala Asp Ala Asn Leu Ser
 57 45 50 55
 59 aag aac ggg ggg ctg gag gtc tgg ctg ccc cgg gac agg cag ggg cag 484
 60 Lys Asn Gly Gly Leu Glu Val Trp Leu Pro Arg Asp Arg Gln Gly Gln
 61 60 65 70
 63 cct gag tcc tgc ctc cgc ttc acc tcc ccg cag tgg gga ctg ccc ttt 532
 64 Pro Glu Ser Cys Leu Arg Phe Thr Ser Pro Gln Trp Gly Leu Pro Phe
 65 75 80 85 90

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67 ctc aat ggc aca gaa gcc aat ggc aca ggg gcc aca gag ccc tgc acc 580
68 Leu Asn Gly Thr Glu Ala Asn Gly Thr Gly Ala Thr Glu Pro Cys Thr
69          95          100          105
71 gat ggc tgg atc tat gac aac agc acc ttc cca tct acc atc gtg act 628
72 Asp Gly Trp Ile Tyr Asp Asn Ser Thr Phe Pro Ser Thr Ile Val Thr
73          110          115          120
75 gag tgg gac ctt gtg tgc tct cac agg gcc cta cgc cag ctg gcc cag 676
76 Glu Trp Asp Leu Val Cys Ser His Arg Ala Leu Arg Gln Leu Ala Gln
77          125          130          135
79 tcc ttg tac atg gtg ggg gtg ctg ctc gga gcc atg gtg ttc ggc tac 724
80 Ser Leu Tyr Met Val Gly Val Leu Leu Gly Ala Met Val Phe Gly Tyr
81          140          145          150
83 ctt gca gac agg cta ggc cgc cgg aag gta ctc atc ttg aac tac ctg 772
84 Leu Ala Asp Arg Leu Gly Arg Arg Lys Val Leu Ile Leu Asn Tyr Leu
85 155          160          165          170
87 cag aca gct gtg tca ggg acc tgc gca gcc ttc gca ccc aac ttc ccc 820
88 Gln Thr Ala Val Ser Gly Thr Cys Ala Ala Phe Ala Pro Asn Phe Pro
89          175          180          185
91 atc tac tgc gcc ttc cgg ctc ctc tcg ggc atg gct ctg gct ggc atc 868
92 Ile Tyr Cys Ala Phe Arg Leu Leu Ser Gly Met Ala Leu Ala Gly Ile
93          190          195          200
95 tcc ctc aac tgc atg aca ctg aat gtg gag tgg atg ccc att cac aca 916
96 Ser Leu Asn Cys Met Thr Leu Asn Val Glu Trp Met Pro Ile His Thr
97          205          210          215
99 cgg gcc tgc gtg ggc acc ttg att ggc tat gtc tac agc ctg ggc cag 964
100 Arg Ala Cys Val Gly Thr Leu Ile Gly Tyr Val Tyr Ser Leu Gly Gln
101          220          225          230
103 ttc ctc ctg gct ggt gtg gcc tac gct gtg ccc cac tgg cgc cac ctg 1012
104 Phe Leu Leu Ala Gly Val Ala Tyr Ala Val Pro His Trp Arg His Leu
105 235          240          245          250
107 cag cta ctg gtc tct gcg cct ttt ttt gcc ttc ttc atc tac tcc tgg 1060
108 Gln Leu Leu Val Ser Ala Pro Phe Phe Ala Phe Phe Ile Tyr Ser Trp
109          255          260          265
111 ttc ttc att gag tcg gcc cgc tgg cac tcc tcc tcc ggg agg ctg gac 1108
112 Phe Phe Ile Glu Ser Ala Arg Trp His Ser Ser Ser Gly Arg Leu Asp
113          270          275          280
115 ctc acc ctg agg gcc ctg cag aga gtc gcc cgg atc aat ggg aag cgg 1156
116 Leu Thr Leu Arg Ala Leu Gln Arg Val Ala Arg Ile Asn Gly Lys Arg
117          285          290          295
119 gaa gaa gga gcc aaa ttg agt atg gag gta ctc cgg gcc agt ctg cag 1204
120 Glu Glu Gly Ala Lys Leu Ser Met Glu Val Leu Arg Ala Ser Leu Gln
121          300          305          310
123 aag gag ctg acc atg ggc aaa ggc cag gca tcg gcc atg gag ctg ctg 1252
124 Lys Glu Leu Thr Met Gly Lys Gly Gln Ala Ser Ala Met Glu Leu Leu
125 315          320          325          330
127 cgc tgc ccc acc ctc cgc cac ctc ttc ctc tgc ctc tcc atg ctg tgg 1300
128 Arg Cys Pro Thr Leu Arg His Leu Phe Leu Cys Leu Ser Met Leu Trp
129          335          340          345
131 ttt gcc act agc ttt gca tac tat ggg ctg gtc atg gac ctg cag ggc 1348

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132 Phe Ala Thr Ser Phe Ala Tyr Tyr Gly Leu Val Met Asp Leu Gln Gly
133          350          355          360
135 ttt gga gtc agc atc tac cta atc cag gtg atc ttt ggt gct gtg gac 1396
136 Phe Gly Val Ser Ile Tyr Leu Ile Gln Val Ile Phe Gly Ala Val Asp
137          365          370          375
139 ctg cct gcc aag ctt gtg ggc ttc ctt gtc atc aac tcc ctg ggt cgc 1444
140 Leu Pro Ala Lys Leu Val Gly Phe Leu Val Ile Asn Ser Leu Gly Arg
141          380          385          390
143 cgg cct gcc cag atg gct gca ctg ctg ctg gca ggc atc tgc atc ctg 1492
144 Arg Pro Ala Gln Met Ala Ala Leu Leu Leu Ala Gly Ile Cys Ile Leu
145 395          400          405          410
147 ctc aat ggg gtg ata ccc cag gac cag tcc att gtc cga acc tct ctt 1540
148 Leu Asn Gly Val Ile Pro Gln Asp Gln Ser Ile Val Arg Thr Ser Leu
149          415          420          425
151 gct gtg ctg ggg aag ggt tgt ctg gct gcc tcc ttc aac tgc atc ttc 1588
152 Ala Val Leu Gly Lys Gly Cys Leu Ala Ala Ser Phe Asn Cys Ile Phe
153          430          435          440
155 ctg tat act ggg gaa ctg tat ccc aca atg atc cgg cag aca ggc atg 1636
156 Leu Tyr Thr Gly Glu Leu Tyr Pro Thr Met Ile Arg Gln Thr Gly Met
157          445          450          455
159 gga atg ggc agc acc atg gcc cga gtg ggc agc atc gtg agc cca ctg 1684
160 Gly Met Gly Ser Thr Met Ala Arg Val Gly Ser Ile Val Ser Pro Leu
161          460          465          470
163 gtg agc atg act gcc gag ctc tac ccc tcc atg cct ctc ttc atc tac 1732
164 Val Ser Met Thr Ala Glu Leu Tyr Pro Ser Met Pro Leu Phe Ile Tyr
165 475          480          485          490
167 ggt gct gtt cct gtg gcc gcc agc gct gtc act gtc ctc ctg cca gag 1780
168 Gly Ala Val Pro Val Ala Ala Ser Ala Val Thr Val Leu Leu Pro Glu
169          495          500          505
171 acc ctg ggc cag cca ctg cca gac acg gtg cag gac ctg gag agc agg 1828
172 Thr Leu Gly Gln Pro Leu Pro Asp Thr Val Gln Asp Leu Glu Ser Arg
173          510          515          520
175 aaa ggg aaa cag acg cga cag caa caa gag cac cag aag tat atg gtc 1876
176 Lys Gly Lys Gln Thr Arg Gln Gln Gln Glu His Gln Lys Tyr Met Val
177          525          530          535
179 cca ctg cag gcc tca gca caa gag aag aat gga ctc tgaggactga 1922
180 Pro Leu Gln Ala Ser Ala Gln Glu Lys Asn Gly Leu
181          540          545          550
183 gaaggggcct tacagaaccc taaagggagg gaaggtccta caggtctccg gccacccaca 1982
185 caaggaggag gaagaggaaa tggtagccca agtgtggggg ttgtggttca ggaaagcatc 2042
187 ttcccagggg tccacctccc ttataaaacc ccaccagaac cacatcatta aaaggtttga 2102
189 ctgcgaaaaa aaaaaaaaaa a 2123
192 <210> SEQ ID NO: 2
193 <211> LENGTH: 550
194 <212> TYPE: PRT
195 <213> ORGANISM: Homo sapiens
197 <400> SEQUENCE: 2
198 Met Ala Phe Asn Asp Leu Leu Gln Gln Val Gly Gly Val Gly Arg Phe
199 1 5 10 15

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201 Gln Gln Ile Gln Val Thr Leu Val Val Leu Pro Leu Leu Leu Met Ala
202          20          25          30
204 Ser His Asn Thr Leu Gln Asn Phe Thr Ala Ala Ile Pro Thr His His
205          35          40          45
207 Cys Arg Pro Pro Ala Asp Ala Asn Leu Ser Lys Asn Gly Gly Leu Glu
208          50          55          60
210 Val Trp Leu Pro Arg Asp Arg Gln Gly Gln Pro Glu Ser Cys Leu Arg
211 65          70          75          80
213 Phe Thr Ser Pro Gln Trp Gly Leu Pro Phe Leu Asn Gly Thr Glu Ala
214          85          90          95
216 Asn Gly Thr Gly Ala Thr Glu Pro Cys Thr Asp Gly Trp Ile Tyr Asp
217          100          105          110
219 Asn Ser Thr Phe Pro Ser Thr Ile Val Thr Glu Trp Asp Leu Val Cys
220          115          120          125
222 Ser His Arg Ala Leu Arg Gln Leu Ala Gln Ser Leu Tyr Met Val Gly
223          130          135          140
225 Val Leu Leu Gly Ala Met Val Phe Gly Tyr Leu Ala Asp Arg Leu Gly
226 145          150          155          160
228 Arg Arg Lys Val Leu Ile Leu Asn Tyr Leu Gln Thr Ala Val Ser Gly
229          165          170          175
231 Thr Cys Ala Ala Phe Ala Pro Asn Phe Pro Ile Tyr Cys Ala Phe Arg
232          180          185          190
234 Leu Leu Ser Gly Met Ala Leu Ala Gly Ile Ser Leu Asn Cys Met Thr
235          195          200          205
237 Leu Asn Val Glu Trp Met Pro Ile His Thr Arg Ala Cys Val Gly Thr
238          210          215          220
240 Leu Ile Gly Tyr Val Tyr Ser Leu Gly Gln Phe Leu Leu Ala Gly Val
241 225          230          235          240
243 Ala Tyr Ala Val Pro His Trp Arg His Leu Gln Leu Leu Val Ser Ala
244          245          250          255
246 Pro Phe Phe Ala Phe Phe Ile Tyr Ser Trp Phe Phe Ile Glu Ser Ala
247          260          265          270
249 Arg Trp His Ser Ser Ser Gly Arg Leu Asp Leu Thr Leu Arg Ala Leu
250          275          280          285
252 Gln Arg Val Ala Arg Ile Asn Gly Lys Arg Glu Glu Gly Ala Lys Leu
253          290          295          300
255 Ser Met Glu Val Leu Arg Ala Ser Leu Gln Lys Glu Leu Thr Met Gly
256 305          310          315          320
258 Lys Gly Gln Ala Ser Ala Met Glu Leu Leu Arg Cys Pro Thr Leu Arg
259          325          330          335
261 His Leu Phe Leu Cys Leu Ser Met Leu Trp Phe Ala Thr Ser Phe Ala
262          340          345          350
264 Tyr Tyr Gly Leu Val Met Asp Leu Gln Gly Phe Gly Val Ser Ile Tyr
265          355          360          365
267 Leu Ile Gln Val Ile Phe Gly Ala Val Asp Leu Pro Ala Lys Leu Val
268          370          375          380
270 Gly Phe Leu Val Ile Asn Ser Leu Gly Arg Arg Pro Ala Gln Met Ala
271 385          390          395          400
273 Ala Leu Leu Leu Ala Gly Ile Cys Ile Leu Leu Asn Gly Val Ile Pro

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274          405          410          415
276 Gln Asp Gln Ser Ile Val Arg Thr Ser Leu Ala Val Leu Gly Lys Gly
277          420          425          430
279 Cys Leu Ala Ala Ser Phe Asn Cys Ile Phe Leu Tyr Thr Gly Glu Leu
280          435          440          445
282 Tyr Pro Thr Met Ile Arg Gln Thr Gly Met Gly Met Gly Ser Thr Met
283          450          455          460
285 Ala Arg Val Gly Ser Ile Val Ser Pro Leu Val Ser Met Thr Ala Glu
286 465          470          475          480
288 Leu Tyr Pro Ser Met Pro Leu Phe Ile Tyr Gly Ala Val Pro Val Ala
289          485          490          495
291 Ala Ser Ala Val Thr Val Leu Leu Pro Glu Thr Leu Gly Gln Pro Leu
292          500          505          510
294 Pro Asp Thr Val Gln Asp Leu Glu Ser Arg Lys Gly Lys Gln Thr Arg
295          515          520          525
297 Gln Gln Gln Glu His Gln Lys Tyr Met Val Pro Leu Gln Ala Ser Ala
298          530          535          540
300 Gln Glu Lys Asn Gly Leu
301 545          550
304 <210> SEQ ID NO: 3
305 <211> LENGTH: 77
306 <212> TYPE: DNA
307 <213> ORGANISM: Artificial Sequence
309 <220> FEATURE:
310 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
311     oligonucleotide
313 <400> SEQUENCE: 3
314 accgtctaga attcttttta tttttaattt tctttcaa acgtccacca tggccttta 60
315 tgacctcctg cagcagg                                     77
318 <210> SEQ ID NO: 4
319 <211> LENGTH: 51
320 <212> TYPE: DNA
321 <213> ORGANISM: Artificial Sequence
323 <220> FEATURE:
324 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
325     oligonucleotide
327 <400> SEQUENCE: 4
328 tactcacgtg gatcctgac agacgtctgt aggaccttcc ctccctttag g      51
331 <210> SEQ ID NO: 5
332 <211> LENGTH: 9
333 <212> TYPE: DNA
334 <213> ORGANISM: Artificial Sequence
336 <220> FEATURE:
337 <223> OTHER INFORMATION: Description of Artificial Sequence: Kozak
338     consensus sequence
340 <400> SEQUENCE: 5
341 ccaccatgg                                           9
344 <210> SEQ ID NO: 6
345 <211> LENGTH: 25

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VERIFICATION SUMMARY

PATENT APPLICATION: US/10/086,816A

DATE: 11/06/2002

TIME: 14:32:41

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L:10 M:271 C: Current Filing Date differs, Replaced Current Filing Date